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EXAMINER

LAVARIAS, ARNEL C

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/857,205

Applicant(s)

WOLLESCHEFSKY, RALF

Examiner

Arnel C. Lavarias

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-22, 24-60, 63-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-22, 24-60 and 63-68 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendments to Claims 13-14, 16, 18-19, 22, 24, 28, 37, 43, 58, and 63 in the submission dated 12/22/04 are acknowledged and accepted.
2. The cancellation of Claims 12, 23, 61-62 in the submission dated 12/22/04 is acknowledged and accepted.

Response to Arguments

3. The Applicant argues that, with respect to newly amended Claims 12, 22, 24, 28, 37, 43, and 58, Engelhardt fails to explicitly teach or reasonably suggest a microscope, such as a fluorescence microscope, including a device for feeding light into the microscope beam path and for detecting emission light emitted by a sample, the microscope including one or more diffracting means for feeding the excitation light into the microscope, for separating excitation light and wavelength shifted emission light emitted by the sample, and for simultaneously regulating the excitation intensity of one or more light sources. After reviewing the Engelhardt reference, the Examiner agrees, and respectfully withdraws the rejections of Claims 12-65 in Sections 7-13 in the Office Action dated 7/12/04.
4. Claims 13-22, 24-60, 63-68 are now rejected as follows.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the plurality of acousto-optical means which are arranged on a common optical axis for individually feeding the excitation light from the sources into the microscope optics means by diffraction of the excitation light, and the plurality of acousto-optical means for feeding the excitation light from the radiation means into the microscope optics means by diffraction of the excitation light (See Claim 43) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and

informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Double Patenting

6. Applicant is advised that should Claim 63 be found allowable, Claim 64 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 13-22, 24-60, 63-68 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 22, 24, 28, 37, 43, and 58 all recite the limitation of a microscope, such as a fluorescence microscope, including a device for feeding light into the microscope beam

path and for detecting emission light emitted by a sample, the microscope including one or more diffracting means for feeding the excitation light into the microscope, for separating excitation light and wavelength shifted emission light emitted by the sample, and for simultaneously regulating the excitation intensity of one or more light sources. However, after reviewing the specification and drawings of the disclosure, it appears that the one or more diffracting means (i.e. the acousto-optic tunable filter of the instant invention) has not been disclosed as regulating the excitation intensity of the one or more light sources simultaneously or at the same time as feeding the excitation light into the microscope and separating excitation light and wavelength shifted emission light emitted by the sample. Paragraph 00014 of Applicant's disclosure mentions the invention being able to regulate an excitation intensity. Further, Paragraph 00015 discloses that multiple wavelengths of laser light may be fed simultaneously or individually with an excitation power which can be adjusted independently of each other. However, the specification lacks sufficient details regarding regulating the excitation intensity in a simultaneous manner with feeding the excitation light into the microscope and separating excitation light and wavelength shifted emission light emitted by the sample. Claims 13-21, 25-27, 29-36, 38-42, 44-57, 59-60, 63-68 are variously dependent on Claims 13-22, 24-60, 63-68, and hence inherits the deficiencies of Claims 13-22, 24-60, 63-68.

9. Claims 43-45, 48-49, 68 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 43 recites the limitation that the fluorescence microscope includes 1) a plurality of acousto-optical means which are arranged on a common optical axis for individually feeding the excitation light from the sources into the microscope optics means by diffraction of the excitation light, and 2) a separate plurality of acousto-optical means for feeding the excitation light from the radiation means into the microscope optics means by diffraction of the excitation light. The Applicant's disclosure only discloses a single plurality of acousto-optical means (See Figure 4 in particular) being arranged on a common optical axis for individually feeding the excitation light from the sources into the microscope optics means by diffraction of the excitation light, for regulating an excitation intensity of each of the light sources. No separate plurality of acousto-optical means has been disclosed in the same optical system for functioning solely to feed the excitation light from the radiation means into the microscope optics means by diffraction of the excitation light (it is noted that the above single plurality of acousto-optical means already provides this function in Figure 4 and that no separate set of acousto-optic elements is required or disclosed). Claims 44-45, 48-49, 68 are dependent on Claim 43, and hence inherit the deficiencies of Claim 43.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 13-16, 18-20, 22, 28-32, 37-39, 51, 54-55, 57, 63-64, 66-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelhardt '884 (WO 99/42884), of record.

Engelhardt '884 discloses a fluorescence scanning confocal microscope (See Figures 2-6, 8-9; Abstract), comprising a radiation source such as a laser (See 2 in Figure 9) which emits excitation light for irradiating a sample (See 10 in Figure 9), the sample emitting excitation and wavelength-shifted emission light; a detection device (See 15, 24 in Figure 9) for detection of emission light emitted by the sample; an excitation and detection pinhole (See 22 in Figure 6; pinhole between elements 18 in Figure 8); microscope optics (See for example 1 in Figure 9) for directing excitation light to the sample and for directing emission light back in the direction of the radiation source and detection device; a plurality of acousto-optic elements (See for example 17, 19, 4 in Figures 5-6, 9), such as AOTF's or AOD's, for regulating the excitation intensity (It is noted that the diffraction efficiency of the acousto-optic elements determine the intensity of light that is diffracted into each of the various diffraction orders, and further that for acousto-optic elements such as AOTF's or AOD's, the diffraction efficiency, and hence the intensity, is highly dependent on the strength of the acoustic power and frequency input to the acousto-optic crystal), for diffracting excitation light into multiple orders, such as the zero and first order (See for example Page 5, line 25-Page 6, line 16), for separating excitation light and wavelength-shifted emission light emitted by the sample by diffraction of the excitation light (The Examiner notes that the systems of Figures 2-6,

8-9 are used for fluorescence measurements; the acousto-optic devices operate on diffraction principles and thus has wavelength-dependent diffracting characteristics; and both scattered fluorescence and source wavelengths pass through the acousto-optic device) and which is positioned between the radiation source and microscope optics in such a way that diffracted excitation light can be introduced into the microscope optics, wherein the emission light emitted by the sample has fractions of excitation light and fractions of wavelength-shifted fluorescence light (it is noted that upon excitation by the source, the sample will emit its characteristic fluorescence, as well as specularly and diffusely reflect and transmit a portion of the source light), excitation light emitted by the sample is deflected in the direction of the radiation source by diffraction by the acousto-optic device, and wavelength-shifted fluorescence light emitted by the sample is transmitted through the acousto-optic element and is spatially separable from excitation light fractions of the emission light, and wherein the detection device is so positioned with respect to the acousto-optic element that wavelength-shifted fluorescence light transmitted through the acousto-optic element is detected by means of the detection device, and further comprising a filter device (See for example 25 in Figure 9) which for the selective detection of wavelength-shifted fluorescence light in the detection device is positioned between the acousto-optic element and the detection device, and at least one optical means, such as a reflecting element (See 6 in Figure 9), for influencing the light direction and for separating the light fractions, which is located in at least one of an excitation beam path upstream of the acousto-optic element and a detection beam path downstream of the acousto-optic element. Engelhardt '884 additionally discloses the

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acousto-optical means (See 4, 17 in Figure 9) being positioned with respect to each other and the beam path such that only wavelength-shifted emission light that is undiffracted (See 14 in Figure 9) is detected by the detector device (See 24, 15 in Figure 9).

Engelhardt '884 does not explicitly disclose the acousto-optic elements simultaneously regulating the excitation intensity along with diffracting excitation light into multiple orders and separating excitation light and wavelength-shifted emission light emitted by the sample by diffraction of the excitation light. However, one of ordinary skill in the art would have known to adjust the input acoustic power and frequency during operation of the fluorescence scanning confocal microscope to tune the acousto-optic element to provide maximum diffraction to the incident excitation source light for input into the microscope. By doing this, a maximum amount of excitation light may be applied to the sample to increase the fluorescence emitted by the sample. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the acousto-optic elements simultaneously regulate the excitation intensity along with diffracting excitation light into multiple orders and separating excitation light and wavelength-shifted emission light emitted by the sample by diffraction of the excitation light in the microscope of Engelhardt '884, for the purpose of maximizing excitation source light throughput to the sample, thus increasing the fluorescence signal-to-noise ratio of the system.

12. Claims 21, 33-36, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelhardt '884.

Engelhardt '884 discloses the invention as set forth above, except for the optical means being a light refracting element, such as an unvaporized prism. The Examiner notes that the optical element of Engelhardt '884 (See for example 2 in Figure 1) is a simple wavelength dependent beamsplitter performing a light fraction separation function. It is well known in the art that prisms similarly perform such a wavelength separation function based on the refractive properties of the prism material. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the optical means be a light refracting element, such as an unvaporized prism, for the purpose of simplifying the optical layout of the system and reducing the cost, size, and weight of the system.

13. Claims 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelhardt '884.

Engelhardt '884 discloses the invention as set forth above, except for the acousto-optic deflector elements being an acousto-optic modulator and then an acousto-optic tunable filter in the direction of the microscope optics. The Examiner notes that it is well known in the art that acousto-optic deflectors, modulators, and tunable filters are all the same devices based on the acousto-optic effect in a Bragg cell. Hence, all diffract, modulate, and tune light in the same way, based on the applied acoustic wave onto the device. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the acousto-optic deflectors be an acousto-optic modulator and then an acousto-optic tunable filter in the direction of the microscope

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optics for the purpose of providing additional intensity and wavelength adjustability for optimizing the operation of the fluorescence microscope.

14. Claims 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelhardt '884.

Engelhardt '884 discloses the invention as set forth above, except for the fluorescence microscope further including at least one glass fiber provided for feeding in excitation light. It is well known in the art of optical microscopy and optical spectroscopy to utilize optical fibers to guide excitation light from a source to a sample, as well as to guide emission light from a sample to a detection system, for the purpose of reducing the optical system complexity, size, cost, and weight, as well as for providing a flexible means of routing light within the optical system.

15. Claims 50, 52, 58-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelhardt '884 in view of Asakawa (JP 01282515), of record.

Engelhardt '884 discloses the invention as set forth above. Engelhardt '884 additionally discloses the radiation source being constructed as a plurality of lasers having different wavelengths (See 2 in Figures 3-4; Page 5, line 25-Page 7, line 17). Engelhardt '884 lacks a plurality of acoustic-optical elements being provided and with each laser is associated at least one acousto-optical element. However, Asakawa teaches an optical microscope (See Figures 1 or 4) wherein the optical source and acousto-optical devices are provided as a plurality of optical laser sources (See 1, 2, 3 of Figure 1 or 4) and as a plurality of acousto-optical modulator devices (See 7, 8, 9 in Figures 1 or 4), respectively, such that different wavelengths can be simultaneously fed into the

microscope beam path (See Figures 1 or 4). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a plurality of acoustic-optical elements be provided and with each laser is associated at least one acousto-optical element, as taught by Asakawa, in the fluorescence microscope of Engelhardt '884, for the purpose of simplifying the optical detection system as well as reduce the cost of the optical system.

16. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over Engelhardt '884 in view of Asakawa.

Engelhardt '884 in view of Asakawa discloses the invention as set forth above. Asakawa additionally discloses that the light beams of the three lasers (See 1, 2, 3 in Figure 1 or 4) are switchable in order with time according to the applied high frequency signal applied to the acousto-optical modulator (See 7, 8, 9 in Figures 1 or 4; Abstract). However, Engelhardt '884 in view of Asakawa lacks the radiation of the plurality of lasers being fed into the microscope path in a sequence based on decreasing wavelength. It would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the timing sequence of the lasers of Engelhardt '884 in view of Asakawa such that the radiation of the plurality of lasers are fed into the microscope path in a sequence based on decreasing wavelength since the order or sequence of the radiation of the lasers entering the microscope beam path is not critical to the operation of the function of the fluorescence microscope, and one skilled in the art would know to adjust the order or sequence based on time of arrival of the excitation pulse onto the sample, as per the intended application. One would have been motivated

to have the radiation of the plurality of lasers be fed into the microscope path in a sequence based on decreasing wavelength to collect, simplify and organize the fluorescence data collected from the detection system based on excitation wavelength sequence.

17. Claims 24-27, 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelhardt '884 in view of Imai (JP 05080366A).

Engelhardt '884 discloses the invention as set forth above. Engelhardt '884 further discloses the radiation means comprising a plurality of light sources which provide excitation light of different wavelengths (See for example 2 in Figures 1, 3-4). However, Engelhardt '884 lacks a plurality of acousto-optical means which are arranged on a common optical axis for individually feeding the excitation light from the light sources into the microscope optics by means of diffraction of the excitation light. However, Imai teaches an alternative method of combining multiple wavelengths of light from multiple light sources (See for example Figure 1), wherein acousto-optical means (See 23A, 23B, 23C in Figure 1) are arranged on a common optical axis, instead of side-by-side as disclosed in Figures 1, 3-4 of Engelhardt '884, for individually feeding the excitation light from the light sources onto a common path by means of diffraction of the excitation lights. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the acousto-optical means of the microscope of Engelhardt '884 be a plurality of acousto-optical means which are arranged on a common optical axis for individually feeding the excitation light from the light sources into the microscope optics by means of diffraction of the excitation light, as taught by Imai, to

take advantage of the additional flexibility provided by being able to switch only one or a subset of all of the acousto-optical means, allowing for customized excitation wavelength input selection.

18. Claims 17 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelhardt '884 in view of Imai.

Engelhardt '884 in view of Imai discloses the invention as set forth above, except for the microscope further including means for switching the light diffracting means by way of a frequency change from a first wavelength of a first laser to a second wavelength of a second laser. However, it is well known in the art that the operation of acousto-optic elements, such as AOTF's or AOD's, is dependent on the acoustic driving power and frequency applied to the acousto-optic crystals. In particular, the acoustic driving power adjusts the diffracted light output intensity and the acoustic driving frequency adjusts the wavelength of light diffracted by the acousto-optic elements. Further, Imai teaches that with multiple acousto-optic elements, one may switch from one wavelength of one source to another wavelength of another source by switching on or off the various acousto-optic elements (See Paragraphs 0009-0016; Figure 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the microscope of Engelhardt '884 in view of Imai further include means for switching the light diffracting means by way of a frequency change from a first wavelength of a first laser to a second wavelength of a second laser, as additionally taught by Imai, to attain highly reliable, high frequency wavelength switching without moving mechanical parts.

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19. Claims 43-45, 49, 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelhardt '884 in view of Asakawa as applied to Claims 28, 50, 52, 58-60 above, and further in view of Imai.

Engelhardt '884 in view of Asakawa discloses the invention as set forth above, except for an additional plurality of acousto-optical means which are arranged on a common optical axis for individually feeding the excitation light from the light sources into the microscope optics by means of diffraction of the excitation light. However, Imai teaches an alternative method of combining multiple wavelengths of light from multiple light sources (See for example Figure 1), wherein acousto-optical means (See 23A, 23B, 23C in Figure 1) are arranged on a common optical axis, instead of side-by-side as disclosed in Figures 1, 3-4 of Engelhardt '884, for individually feeding the excitation light from the light sources onto a common path by means of diffraction of the excitation lights.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the acousto-optical means of the microscope of Engelhardt '884 in view of Asakawa further include an additional plurality of acousto-optical means which are arranged on a common optical axis for individually feeding the excitation light from the light sources into the microscope optics by means of diffraction of the excitation light, as taught by Imai, to take advantage of the additional flexibility provided by being able to switch only one or a subset of all of the acousto-optical means, allowing for customized excitation wavelength input selection.

20. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Engelhardt '884 in view of Asakawa, and further in view of Imai.

Engelhardt '884 in view of Asakawa, and further in view of Imai discloses the invention as set forth above, except for the fluorescence microscope further including at least one glass fiber provided for feeding in excitation light. It is well known in the art of optical microscopy and optical spectroscopy to utilize optical fibers to guide excitation light from a source to a sample, as well as to guide emission light from a sample to a detection system, for the purpose of reducing the optical system complexity, size, cost, and weight, as well as for providing a flexible means of routing light within the optical system.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

<http://micro.magnet.fsu.edu/primer/java/filters/aotf/>.

The above web site is being cited to evidence the conventional operation of acousto-optical tunable filters (AOTF's) that may be utilized in confocal microscope systems.

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not


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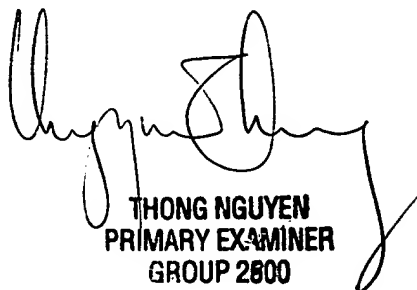
mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 9:30 AM - 6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Arnel C. Lavarias
3/22/05


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